MEMORANDUM
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
West Central Regional Office

3019 Peters Creek Rd. Roanoke, VA 24019

SUBJECT: DRAFT Meeting Minutes, Sixth Meeting, New River PCB Source Search Citizens' Committee

TO: Committee Members

FROM: Jay Roberts, DEQ-WCRO

DATE: DRAFT DATE -- June 4, 2004

COPIES: John Copeland, DGIF; Jean Gregory, DEQ; Kip Foster, DEQ

The sixth meeting of the New River Polychlorinated Biphenyls (PCB) Source Search Citizens' Committee was held on Thursday, May 27, 2004, at the New River Valley Competitiveness Center, Radford, Virginia. Twenty-one people attended the meeting, and sixteen persons signed-in. DEQ staff present included Larry Willis, lead sampler, Gary Phillip, primary author of draft report, and Jay Roberts.

Rick Roth, Chair, started the meeting by asking that committee members and the public introduce themselves. Members attending were Darliet Colley, David Bernard, Charles Maus, Phil Lockhard, Llyn Sharp, and Rick Roth. W. Tom Miller, Sean Hash, and Ron Powers were not present.

After introductions, Dr. Roth asked if committee members had any comments on the minutes from the fifth meeting. Dr. Roth provided comments, which were incorporated into the final minutes. Hearing no comments, committee members voted to approve the minutes.

Dr. Roth requested that DEQ staff proceed with the presentation. Jay Roberts presented the facility sampling results, including data collected from Walker Creek. A copy of a draft report of findings was provided to the members. A copy of the draft report and presentation is attached to the minutes. Committee members, as well as members of the public, were provided copies of the draft report. Copies of analytical results were provided to those facility representatives in attendance expressing an interest in having a copy of results. Committee members and the general public in attendance were requested to review and comment on the draft report within 30 days of the meeting, or by **June 28, 2004**.

One new point of information regarding the presence of PCBs in freshwater stream sediments. DEQ is assessing a water body with a total PCB concentration greater than 676 parts per billion (ppb) as being a "water of concern" to the state, but fully supporting its designated uses. In other words, 676 ppb is a "screening value" used to assess sediment data relative to its potential harm to aquatic life. For the purposes of water quality monitoring and assessment, additional monitoring should be scheduled in such water bodies to further assess aquatic use life support.

The following issues were discussed in the course of the presentation.

Q: How did you determine the non-outlier maximum value?

A: We calculated the difference between the 75th percentile value (1,563 ppb) and the 25th percentile value (9.56 ppb) of the data set, and multiplied the difference (1,553 ppb) by 1.5. This value is 3,883 ppb. Any sample result greater than 1.5 times the inner quartile range, 3,883 ppb, was labeled as an unusually high value that appears to be indicative that a PCB release occurred near or upstream of the sample point.

Q: Discuss at what level DEQ is considering PCB results significant?

A: Greater than 50 ppm, EPA may request further investigations. As noted above, any value greater than 3,883 ppb was labeled as an "unusually high value" that appears to be indicative that a PCB release occurred near or upstream of the sample point.

Q: Where are the samples being collected?

A: Samples are collected at the surface of the soil, or from the upper 0 to 6 inches of sediment if in a stream.

Q: How are sample results reported, as "Aroclors" or "Total PCBs?"

A: All samples results included in DEQ's draft report are reported as "Total PCBs" in nanograms per gram, or parts per billion (ppb). The Virginia Institute of Marine Sciences (VIMS) analyzed samples for 209 PCB congeners. Results are reported as "Total PCBs" by summing the values of each PCB congener reported present in a sample.

Q: Former Virginia Electric Railroad disposal pits are shown on the CELCO site within the drainage area discharging through the 9-CELCO-4 sample collection area. What was the history of these disposal areas?

A: These appear to have been fly ash disposal areas. Fly ash is lighter material that results form the combustion of coal that is carried up the smokestack. There are groundwater monitoring wells in the area. Because of the age of the site, some of the materials disposed of in the area may be unknown material, but it was not necessarily PCBs. We are not aware that any material has been excavated and removed from the area in question.

Q: What is the history of leachate collection at Cloyd's Mountain Landfill?

A: Pulaski County started capturing leachate out of the landfill in approximately 1986. Two older leachate collection ponds were closed out when a pump station was installed. Leachate is now pumped to the Peppers Ferry Regional Wastewater Treatment Plant for treatment prior to discharge to New River.

Q: What is the history of the PCB storage building at RAAP?

A: The building is where PCB containing electrical equipment was temporarily stored until final disposal occurred. RAAP facility staff present at the meeting noted that the building was not currently in use as a temporary PCB storage area.

Q: Storm water outfall sampling is helpful for finding potentially active sources, and data do not appear to indicate active PCB sources at most stormwater outfall locations. Historically, could these outfalls have been conduits for PCBs to New River despite the current data being reported?

A: Data at certain storm water outfalls indicate environmental exposures were occurring, historically, within drainage areas. We can't connect specific results to the fish tissue data in New River. Probably the major goal of the effort is to ensure that there are no active discharges of PCBs to the New River at this time. The data appear to show that there are no ongoing, high concentration discharges of PCBs to New River.

Q: There has been discussion of correcting samples for total organic content (TOC), what is the reason you would want to correct for TOC?

A: A TOC adjustment would be a way to help key on "hot spots" where upstream sources may have been contributing PCBs to a waterbody. If you have the two soil samples with the same PCB concentration, but one soil sample had very little TOC and the other a high amount of TOC, it would be likely that a larger amount of PCB was discharged above the sample point with the lower TOC content. EPA will look at the "Total PCB" results, without TOC adjustment, to determine the need for follow-up site assessment.

Q: Why did you sample Walnut Branch in Christiansburg below Southern States?

A: DEQ's historical pollution response records indicated there may have been a PCB release in the area in the 1970's. We were following up on the historical pollution response report to ensure there were not some residual PCBs in Walnut Branch. This was a sediment sample from the stream.

Q: Is the PCB result obtained at Holston River Quarry site indicative of a PCB release that had could have been discharged to New River, or that PCB contaminated soils or sediment could be reaching New River?

A: This was a composite sample collected directly under a capacitor that appeared to be leaking oil. An electrical switch house and an open transformer was also in the area. The release may not be that old, and this site is probably not a major source of PCBs to the New River.

A facility representative indicated that soil samples had been taken over about a 2,500 square foot area around the capacitor. At the request of the EPA, the sample area was expanded to ensure that any other potential release areas were identified. Samples were collected to depths of up to three feet below the soil surface around a capacitor, transformer, and an electrical switch house. According to samples collected and analyzed, this was a localized release around the capacitor. Samples collected in runoff pathways from the oil stained area near the capacitor did not appear to contain PCBs. The maximum depth of contamination was about 24 inches below the ground surface.

Q: May the Committee members request that the 6 unallocated samples be taken in targeted locations based on the results being presented today?

A: The Committee members may recommend additional sample points for follow-up, but it will be a DEQ management decision as to whether the samples are collected. Please submit such recommendations as comments on the draft report.

Q: What are the plans for sampling catfish in New River? There still seems to be an issue regarding the adequacy of the data set for evaluating the concentrations of PCBs in fish tissue for channel and flathead catfish to determine if the advisory should be extended to those species. Since channel catfish in Bluestone Lake in West Virginia appear to contain PCBs, Virginia needs to look more closely at catfish in New River. People eat more catfish than carp, so further evaluation of the PCB levels in catfish is one of the issues that needs to be investigated further.

A: DEQ will attempt to sample additional catfish in New River, including channel catfish. Carp and catfish occupy different places in the food chain. Carp muck around in sediments and have direct exposure to whatever is in the sediment. Catfish are consuming fish, and thus far prey fish seem to contain low concentrations of PCBs. Hopefully, catfish will be low in PCBs, too.

Q: We have some sediment values in Walker Creek that seem to be high. What plans are there for collecting fish from Walker Creek, including catfish?

A: We will note that the collection and analysis of fish from Walker Creek should be included in future fish collection efforts.

Q: As far as risks associated with different PCB congeners, is that something being considered in targeting PCB sampling and analytical efforts? Certain PCB congeners have been as identified having a higher carcinogen potential.

A: That has been discussed among DEQ staff as something that should be considered in evaluating PCB data and prioritizing the need to collect more data or to further assess a particular site.

Q: Who is going to make the decision about what analytical method to use, congener or aroclor, especially where a particular regulatory protocol may specify an aroclor concentration as a regulatory trigger?

A: When it comes to evaluating historical releases of PCBs, the determination of congeners is the preferable way to determine concentrations of total PCBs present at a site, especially where releases have been exposed to weathering for a significant period of time. In a specific case where regulations require determination of aroclor concentrations, regulatory requirements govern.

NEW RIVER PCB SOURCE IDENTIFICATION REPORT
DEPARTMENT OF ENVIRONMENTAL QUALITY
WEST CENTRAL REGIONAL OFFICE

3019 Peters Creek Road Roanoke, VA 24019

SUBJECT: PCB Source Investigation Sample Collection Plan
New River PCB Source Identification

TO: **Kelly Bunker (EPA), Karen Sismour (DEQ)**

FROM: Gary P. Phillips, Mike Asma, Jay Roberts, Michele Sons, Kip Foster, Larry Willis

DATE: Draft

COPIES: **Steve Dietrich, Rick Weeks, Jean Gregory, Alan Pollock, Durwood Willis, Bill Hayden**

Introduction

On August 6, 2001, the Virginia Department of Health (VDH) issued a fish consumption advisory for carp taken from the New River between the Route 114 bridge (Peppers Ferry Boulevard) just north of Radford to the Virginia-West Virginia state line near Glen Lyn. The advisory is based upon finding polychlorinated biphenyls (PCBs) in fish. Fish tissue and sediment PCB data are included in Attachment A. Based on this information, the New River PCB Source Investigation project was initiated in accordance with the DEQ Toxic Contamination Source Assessment Policy (TCSAP, Jan. 5, 2000) which describes when and how to conduct source assessments for toxic contaminants. All project deliverables not included in the text of this document are contained in the attached compact disc.

In order to identify PCB sources in the New River, soil and sediment samples were collected from industries and municipalities that have current or historical potential to release PCBs to the New River. Potential to release PCBs was determined based on information gathered from agency records, historical public information, interviews, and pre-existing analytical results.

Current or historical potential to release PCBs was determined through a multi-step process. The first step was to define the universe of facilities (currently operating and historical) that should be considered. In order to generate such a comprehensive list, multisystem data queries were performed based on location (such as county, waterbody ID, zip, etc.) for air, water, solid waste, petroleum, VRP, and tire sites. The sources for these queries are listed in Attachment A. Facility lists for each media type were created and maintained separately. Following list synthesis, file searches were performed to determine a more specific facility location, type of industry/operation, and other site-specific information. The initial facility lists totaled approximately 1,350 facilities.

Due to the large number of facilities inventoried, it was necessary to develop a discrete set of criteria that could be applied to the lists in order to narrow and focus them. Facilities not meeting these criteria were removed from the lists as unlikely sources of PCBs. Attachment A, Flowcharts 1 and 2 depict these criteria in flowchart form. Following two iterations of criteria applications, the

combination of the individual media lists, and the elimination of duplicate facility entries, approximately 80 sites remained on the list. The New River PCB Source Investigation Survey included in Attachment A was mailed to the 80 remaining sites. The survey results were then reviewed and based on responses, telephone or on site interviews were conducted. Based on the information gathered during the interview, on site sample points were selected.

Based on the information gathering portion of the project, the areas of interest were selected and are listed below. All samples were a composite of the first 6 inches of soil or sediment. Table 1 shows the site location and number/type of samples collected at each site. The location of each facility is depicted in Attachment B, Figure 1. Dr. Lawrence Willis, Gary P. Phillips, Mike Asma, Jay Roberts, and Gary Du participated in sample collection.

If the analytical data for any site DEQ sampled during this process indicated that PCB levels at the site were > 50 parts per million (ppm), the EPA was immediately notified. Sites that contain > 50 ppm require cleanup under the Toxic Substances Control Act (TSCA). To convert concentrations from parts per billion (ppb) to ppm multiply by 1,000 (e.g., 50 ppm = 50,000 ppb).

Table 1 lists the facilities sampled, their location, and the total number of samples collected:

Table 1. PCB Sampling Sites

Site Location	Site Identification	Number of Samples	Type of Sample
Narrows	Celanese Acetate	6	soil/sediment
Ripplemead	Chemical Lime	5	soil/sediment
Glen Lyn	AEP	5	soil/sediment
Radford	Intermet	6	soil/sediment
Radford	City storage yard	1	sediment
Narrows	SEMCO/Railroad Power Plant	3	sediment
Pembroke	Patrick Enterprises	1	soil/sediment
Radford	Radford Army Ammunition Plant	7	soil/sediment
Radford	AEP Claytor Hydro Dam	1	soil/sediment
Radford	Quarry near Claytor Hydro Dam	1	soil/sediment
Radford	Radford University	1	soil/sediment
Pearisburg	Former New River Tannery	3	soil/sediment
Giles County	Big Walker Creek	2	sediment
Giles County	Sugar Run	1	sediment
Blacksburg	Corning	1	sediment
Christiansburg	UT, Crab Creek	1	sediment
Giles County	Cloyds Mt. LF	1	sediment
Blacksburg	VT Duck Pond	1	sediment
	Total Samples	**47**	

The following are brief descriptions of each facility, any know PCB use and/or releases, and sample location descriptions and associated PCB concentrations.

Celanese Acetate, LLC, Narrows, Virginia

Operations at the Celco Plant began in approximately 1939 and include the production of acetate flake and fiber and steam electric power production. Reported past/present PCB use at the site is dielectric fluid in capacitors and transformers. Surplus PCB oil drums were stored in the maintenance building.

Two PCB spills at the site have been reported to EPA and cleaned up to regulatory levels. A transformer leaked in the Transformer Room in Building 2, and the "1987 PCB Incident" was a spill of approximately 100 gallons of 700,000 ppm Aroclor 1260. The "1987 PCB Incident" spill was caught immediately. The Transformer Room spill in Building 2 was also Aroclor 1260, but in this instance the spill occurred over a longer period of time. The oil tested on the floor of the Transformer Room contained of 31,000 ppm PCBs. In both instances, the spills occurred over predominantly paved areas and the cleanup involved removal and/or cleaning of the pavement.

Concentrations of PCBs (<1 ppm) have also been detected in the Closed Process Sludge Landfill (CPSL). Other landfills are located at the site –Area A is a general (takes all types of non-hazardous waste) RCRA D landfill that is still active. Area B contains a flyash landfill. Other landfill areas are located within the vicinity of Area A and B. They include the Virginian Railroad (an electric RR) disposal area and the "oil disposal pit". The "oil disposal pit" was reportedly used to dispose of waste oil and other chemicals (including solvents).

The Celco facility and soil/sediment sample locations and associated PCB concentrations (in ppm) are depicted in Attachment B, Figures 2a and 2b. Sample PCB concentrations and location descriptions are presented in Table 2.

Table 2. Celanese Acetate Soil/Sediment Sample Descriptions

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS007	9-CELCO-1	74.9	Sediment from Outfall 004 (area drains Area A of the landfill)
3NS008	9-CELCO-2	1,242	Sediment from a storm drain in the area of the "1987 PCB Incident"
3NS009	9-CELCO-3	9.56	Sediment from retention basin prior to Outfall 005 (drains Area D of the landfill)
3NS010	9-CELCO-4	3.29	Soil/sediment from the drainage pathway of the CPSL
3NS011	9-CELCO-5	737	Soil/sediment from the drainage pathway of the eastern portion of Area A (culvert on the landfill road)
3NS012	9-CELCO-6	37.9	Sediment from Outfall 001

Chemical Lime, Ripplemead, Virginia

Recent sediment and fish tissue sample results from the mouth of Stony Creek at Norcross indicate an upstream source of PCBs. Chemical Lime consists of two plants (Plant 1 and 2) located adjacent to Stony Creek (a tributary to the New River). Operations at the Plants began in approximately 1920 and included the mining of lime. Reported past/present PCB use at the

sites is dielectric fluid in capacitors and transformers. PCBs were reportedly used at the sites from approximately 1940 to the present. Transformers are/were located in the production areas and in the mines.

Two PCB spills at the sites have occurred. At Plant 2, some transformers were stored on the ground in the northeastern portion of the site. These transformers were moved to the transformer/oil storage building in July 2002 and shortly there after transformers leaked. The PCB concentration of the spilled oil was <1 ppm and its cleanup is documented in the VPDES permit file. At Plant 1 leaks were discovered in 1986 and 1989 at the main substation. The concentration of PCB oil released is unknown. During the site visit, the facility shared analytical results for PCBs in sediment (all were < 1 ppm) from the mine sump at Plant 1. The mine sump water is discharged through Outfall 001.

The Chemical Lime facility and soil/sediment locations and associated PCB concentrations (in ppm) are depicted in Attachment B, Figures 3a and 3b. Sample location descriptions and associated PCB concentrations are presented in Table 3.

Table 3. Chemical Lime Soil/Sediment Sample Descriptions

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS001	9-CLC-1	83.4	Sediment from the former mine dewater ditch (former Outfall 001)
3NS002	9-CLC-2	68.2	Soil/sediment from retention basin that collects runoff from the area draining the "Oil Shed"
3NS003	9-CLC-3	12.3	Sediment from the former mine dewater and current site runoff ditch
3NS004	9-CLC-4	4.04	Sediment from the current site runoff ditch
3NS005	9-CLC-5	7.74	Soil/sediment from the former mine dewatering outfall at Site 2

AEP, Glen Lyn, Virginia

Electric power production at the AEP Plant began in approximately 1919. Reported past/present PCB use at the site is dielectric fluid in capacitors and transformers. Formerly there was a transformer oil filtering system located at the facility. The system cycled the oil from the transformers through a central filter (the filter press building). The oil transfer pipes are subsurface, however inlet and outlet pipes for the system are visible. An oil stain was located at the base of one of the capped inlet pipes, indicating that oil may be currently leaking from the pipe. Also < 50 ppm PCB waste oil was previously burned in oil fired boilers. Five PCB releases occurred between 1991 and 1993, in each case the released fluid was < 150 ppm PCBs. Documentation associated with the releases is located in the New River PCB file.

The AEP Glen Lyn facility and soil/sediment locations and associated PCB concentrations (in ppm) are depicted in Attachment B, Figures 4a and 4b. Sample location descriptions and associated PCB concentrations are presented in Table 4.

Table 4. AEP Glen Lyn Soil/Sediment Sample Descriptions

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS018	9-AEP-1	973	Sediment from the drainage trench located adjacent to the main building
3NS035	9-AEP-2	47,707	Soil from the area adjacent to the transformer oil recycling lines
3NS020	9-AEP-3	1,043	Soil from the area of the filter press building
3NS021	9-AEP-4	63.9	Sediment from the storm water outfall (Outfall 001) that drains the plant area
3NS022	9-AEP-5	65.1	Sediment from Outfall 004

Intermet, Radford, Virginia

Operations began at this facility in 1896, while owned by Virginia Iron Coal and Coke Company. Past/present PCB use at the site are dielectric fluid in capacitors and transformers, light ballasts for fluorescent fixtures, hydraulic oil in the molten steel pouring process, and fluid in the rectifier. There is documentation of a minor PCB spill of less than two gallons in 1978 due to a faulty capacitor. The "Monsanto list" indicates that the Lynchburg Foundry (former facility name) was a relatively large purchaser of Pydraul F-9A (a PCB containing hydraulic oil), buying 5,790 pounds in 1970, 7,110 pounds in 1971, and 2,180 pounds in 1972.

The Intermet facility and soil/sediment sample locations and associated PCB concentrations (in ppm) are depicted in Attachment B, Figure 5. Sample location descriptions and associated PCB concentrations are presented in Table 5.

Table 5. Intermet Soil/Sediment Sample Descriptions

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS036	9-Intermet-1	11,496	Soil from drain and vicinity of former pipeshop
3NS014	9-Intermet-2	106	Sediment from historical process water outfall near settling basins
3NS015	9-Intermet-3	4.34	Sediment from former process water outfall in western portion of the plant
3NS034	9-Intermet-4	32,558	Sediment from historical process water outfall (pipe) located in the central portion of the plant and adjacent to the New River
3NS017	9-Intermet-5	619	Sediment from a current Outfall 003
3NS039R	9-Intermet-6	3,063 (estimated)	Sediment from Inlet to settling pond

Connellys Run, Radford, Virginia

Connellys Run receives runoff from the City of Radford transformer storage area where approximately 25 transformers are currently stored. Oil stains in the area indicate that there is potential that transformers are currently, or have leaked in the past. Radford also owns an incinerator which is located on the same property and an unlined landfill which is located on the opposite side of Connellys Run.

The Radford storage area and sediment location and associated PCB concentration (in ppm) is depicted in Attachment B, Figure 6. The sample location description and associated PCB concentration is presented in Table 6.

Table 6. Radford Transformer Laydown Yard/Landfill Area Sediment Sample Description

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS028	9-RC-1	2.16	Sediment from Connellys run below transformer storage area

Southern Electric and Machine Company (SEMCO)/Formerly Virginian Railroad Power Plant, Narrows, Virginia

The former Virginian Railroad power plant was located adjacent to the current SEMCO site in Narrows. The power plant provided electricity for the Railroad from approximately 1925 to 1965. Potential PCB uses at the site were in capacitors and transformers. In 1965, the plant was partially demolished, however remnants of the plant remain on site.

The SEMCO/Power Plant and sediment locations and associated PCB concentrations (in ppm) are depicted in Attachment B, Figure 7. The sample location descriptions and associated PCB concentrations are presented in Table 7.

Table 7. Former Virginian Railroad Power Plant/SEMCO Soil/Sediment Sample Descriptions

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS024	9-Semco-1	219	Sediment from storm water outfall draining the northern area of the former Power Plant
3NS025	9-Semco-2	33.1	Sediment from historical outfall of Power Plant
3NS026	9-Semco-3	9.02	Sediment from storm water outfall draining the southern area of the former Power Plant

Patrick Enterprises/Doe Creek, Pembroke, Virginia

The building currently occupied by Patrick Enterprises was constructed in 1965. At that time, the building was occupied by dye manufacturer Machine Design. In the early 1970's Machine Design changed its name to Pemco and began repairing transformers for mining operations. This operation lasted till the mid-70's, when it was sold to Fairchild's, who also did machine and repair work on transformers and other electrical equipment for local mining operations until 1985. In 1985, the plant was sold to Patrick Enterprises. Patrick Enterprises machines parts for industries in the area. Potential PCB uses at the site are in capacitors and transformers.

The Patrick Enterprises/Doe Creek sediment sample location and associated PCB concentration (in ppm) is depicted in Attachment B, Figure 8. The sample location description and associated PCB concentration is presented in Table 8.

Table 8. Patrick Enterprises/Doe Creek Sediment Sample Description

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS0027	9-PE-1	5.91	Sediment from storm water outfall from plant into Doe Creek

Radford Army Ammunition Plant, Radford, Virginia

The Radford Arsenal is an extensive industrial complex with several different operations. The facility contains two power plants, however only one is operational at this time. Oil staining was observed in the operational power plant and in the compressor house, indicating that past/present oil leaks and/or spills have occurred. Currently, the facility is sampling some of its Solid Waste Management Units, with PCBs being one of the constituents. The "Monsanto list" indicates that the Hercules Inc. in Radford, Virginia (former operator of the facility), purchased the following quantities of PCB containing hydraulic oils in the years 1970–73:

- 1,207 pounds of Pydraul F-9A
- 141 pounds of Pydraul 150A
- 2,100 pounds of Pydraul 230
- 1,020 pounds of Pydraul 230-A

Facility personnel indicated that the only known use of PCB hydraulic oil was in the hydraulics of powerline repair trucks. Other PCB uses at the site were in transformers and capacitors.

The RAAP soil and sediment locations and associated PCB concentrations (in ppm) are depicted in Attachment B, Figure 9. Sample location descriptions and associated PCB concentrations are presented in Table 9.

Table 9. RAAP Soil/Sediment Sample Descriptions

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS043	9-RAAP-1	8,486	Soil collected around and adjacent to Building 3904
3NS044	9-RAAP-2	7,970	Sediment collected downstream of Outfalls 004 and 013 adjacent to Stroubles Creek
3NS045	9-RAAP-3	10,330	Sediment from Power House sump
3NS046r	9-RAAP-4	17,749	Soil/sediment from area around the compressor house
3NS047	9-RAAP-5	1,563	Sediment from Waste Incinerator Outfall
3NS048	9-RAAP-6	331	Sediment from Outfall 3E, oil storage area
3NS049	9-RAAP-7	679	Sediment from Outfall 2A

AEP Claytor Lake Hydro Dam, Pulaski County, Virginia

The Claytor Lake Hydroelectric Dam was built in 1939. An extensive transformer pad containing several large transformers is located on the property. PCB uses at the site are in transformers and capacitors.

The AEP Claytor Lake Hydro Dam soil/sediment sample location and associated PCB concentration (in ppm) is depicted in Attachment B, Figure 10. The soil/sediment sample location description is presented in Table 10.

Table 10. AEP Claytor Lake Hydro Dam Soil/Sediment Sample Description

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS037	9-AEP1@Claytor	509	Soil/sediment from bank below Dam

Radford University, Former Creosote Plant, Radford, Virginia

The University previously acquired a parcel of property located adjacent to and west of what is now the Facilities Management Building. This property was formerly owned by Norfolk and Western Railroad and was the site of a Creosote Plant. The plant was in operation from approximately 1920 to 1957, when it was damaged by an explosion. This plant housed a small power plant and a transformer pad.

The Radford University soil/sediment sample location and associated PCB concentration (in ppm) is depicted in Attachment B, Figure 11. The sample location description and associated PCB concentration is presented in Table 11.

Table 11. Radford University Soil/Sediment Sample Description

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS029	9-RU-1	3.27	Soil/sediment from drainage area of Former Power Plant

Former Tannery, Giles County, Virginia

Operations at the Tannery site in Giles County began in the late 1800's and ceased in the late 1960's. Buildings at the site were burned in 1975. In 1992, Dewberry and Davis prepared an Environmental Assessment of the site for the Giles County Redevelopment Authority. The report showed high levels of several metals and one positive sample for PCBs (54 ppb, collected 1 ft. below grade). On site there are many rusted and/or crushed 55 gallon drums, several liquid filled underground vats, and other areas containing various types of industrial and household waste.

The Tannery soil/sediment sample locations and associated PCB concentrations (in ppm) are depicted in Attachment B, Figure 12. Sample location descriptions are presented in Table 12.

Table 12. Former New River Tannery Soil/Sediment Sample Descriptions

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS030	9-Tannery-1	37.6	Soil/sediment from underground vat
3NS031	9-Tannery-2	0.89	Soil/sediment from historical process outfall
3NS032	9-Tannery-3	4.67	Soil/Sediment from historical storm water outfall

Former Radford Limestone Corporation Quarry (Holston River Quarry), Pulaski County, Virginia

The site is located on the east bank of the New River approximately 1,000 ft. downstream of Claytor Dam. PCB uses at the site were in capacitors and transformers. The site is currently inactive. The site was sampled due to oil staining in the "electrical building", the presence of an empty transformer casing, several suspected capacitors on the ground (with an associated oil stain), and three pole-mounted capacitors (with an associated oil stain).

The Quarry soil sample location and associated PCB concentration (in ppm) is depicted in Attachment B, Figure 13. The sample location description and associated PCB concentration is presented in Table 13.

Table 13. Former Quarry Adjacent to Claytor Lake Dam Soil Sample Description

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS038	9-Quarry1	25,472,449	Soil from the area of the transformer pad

Big Walker Creek, Giles County, Virginia

Due to known PCB activities in the Big Walker Creek watershed (see Sugar Run discussion below) two sites on Big Walker Creek were sampled.

The sediment sample locations and associated PCB concentrations (in ppm) are depicted in Attachment B, Figures 14a and 14b. The sample location descriptions and associated PCB concentrations are presented in Table 14.

Table 14. Big Walker Creek Sediment Sample Descriptions

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS006	9-Big Walker 1	1.78	Sediment from confluence of New River near NS RR bridge
3NS042	9-Walker 2@monitoring station	7,640	Sediment from monitoring station at Bane

Sugar Run, Giles County, Virginia

In 1992, the former Bane School (also formerly Mountain Machine Manufacturing) was the subject of an EPA investigation and subsequent removal of four 55-gallon drums containing PCB oil, 27 capacitors, and 160 tons of PCB-impacted soil. The former Bane School is located adjacent to Sugar Run, a tributary to Big Walker Creek. The confluence of Sugar Run and Big Walker Creek is located just upstream of the monitoring station at Bane.

The sediment sample location and associated PCB concentration (in ppm) is depicted in Attachment B, Figure 15. The sediment sample location description and associated PCB concentration is presented in Table 15.

Table 15. Sugar Run Sediment Sample Description

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS041	Bane 1@Sugar Run	7,723	Sediment from Sugar Run below the former Bane School

Virginia Tech Duck Pond, Montgomery County, Virginia

The Virginia Tech Duck Pond was selected for sampling because it receives storm water flow from the Virginia Tech Power Plant. Potential PCB uses at the Power Plant are in capacitors and transformers.

The sediment sample location and associated PCB concentration (in ppm) is depicted in Attachment B, Figure 16. The sediment sample location description and associated PCB concentration is presented in Table 16.

Table 16. VT Duckpond Sediment Sample Description

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS051R	9-VA Tech Duck Pond	9.91	Sediment from Upper and Lower Duck Pond downstream of the VT Campus

Corning, Montgomery County, Virginia

Corning is an industrial facility that has been in operation since 1964. The facility currently makes catalytic converter substrates. Potential PCB uses at the site are in capacitors and transformers.

The Corning sediment sample location and associated PCB concentration (in ppm) is depicted in Attachment B, Figure 17. The sample location description and associated PCB concentration is presented in Table 17.

Table 17. Corning Glass Sediment Sample Description

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS052R	9-UT- Below Corning Glass	2.2	Sediment from UT downstream of the facility

Tributary to Crab Creek, Christiansburg, Virginia

The former Swift Farm Supply Co. (currently Southern States) was the subject of a pollution complaint (PC76-551) for "sloppy handling" of pesticides in 1976. Adjacent to the facility is Walnut Creek, a tributary to Crab Creek. As a result of the complaint pesticide and PCB contamination in Crab Creek was investigated and results were reported in a November 19, 1976 Memorandum from Bob Burnley. The 1976 sediment sample from Crab Creek contained 4.5 ppm PCBs.

The sediment sample location and associated PCB concentration (in ppm) is depicted in Attachment B, Figure 18. The sediment sample location description and associated PCB concentration is presented in Table 18

Table 18. Walnut Creek below Southern States Sediment Sample Description

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS050R	9-Below Southern States Christiansburg	10.5	Sediment from Walnut Creek downstream of the facility

Cloyds Mountain Landfill, Giles County, Virginia

Cloyds Mountain Landfill is currently inactive. Based on the recommendation of the New River PCB Citizens Advisory Committee Members, the site was selected for sampling.

The sediment sample location and associated PCB concentration (in ppm) is depicted in Attachment B, Figure 19. The sediment sample location description and associated PCB concentration is presented in Table 19.

Table 19. Drainage from Cloyds Mountain Landfill Sediment Sample Description

VIMS Sample ID	VADEQ Sample ID	Total PCB ppb	Sample Description
3NS040	9-Cloyds1	17,582	Sediment from UT downstream of the facility

Conclusions

All samples contained some quantity of PCBs. With the exception of the Holston River Quarry, Inc. site, all sites were below the 50 ppm level required for a TSCA initiated cleanup. In the case of the Quarry, EPA was immediately notified of the sample results and the site owner is currently working with EPA to remediate the site.

Based on the sampling and information gathering portions of this project there were no identified major ongoing sources of PCBs to the New River. However, soil/sediment transport at each of the sites may be contributing some level PCBs to the New River.

The DEQ is currently working on a statewide approach for managing PCB-impacted sites. The statewide approach may address levels of PCBs in onsite soil/sediment that require further investigation.

Attachment A:

- New River Fish Tissue and Sediment Data
- Information Sources
- Site Selection Criteria
- New River PCB Source Investigation Survey

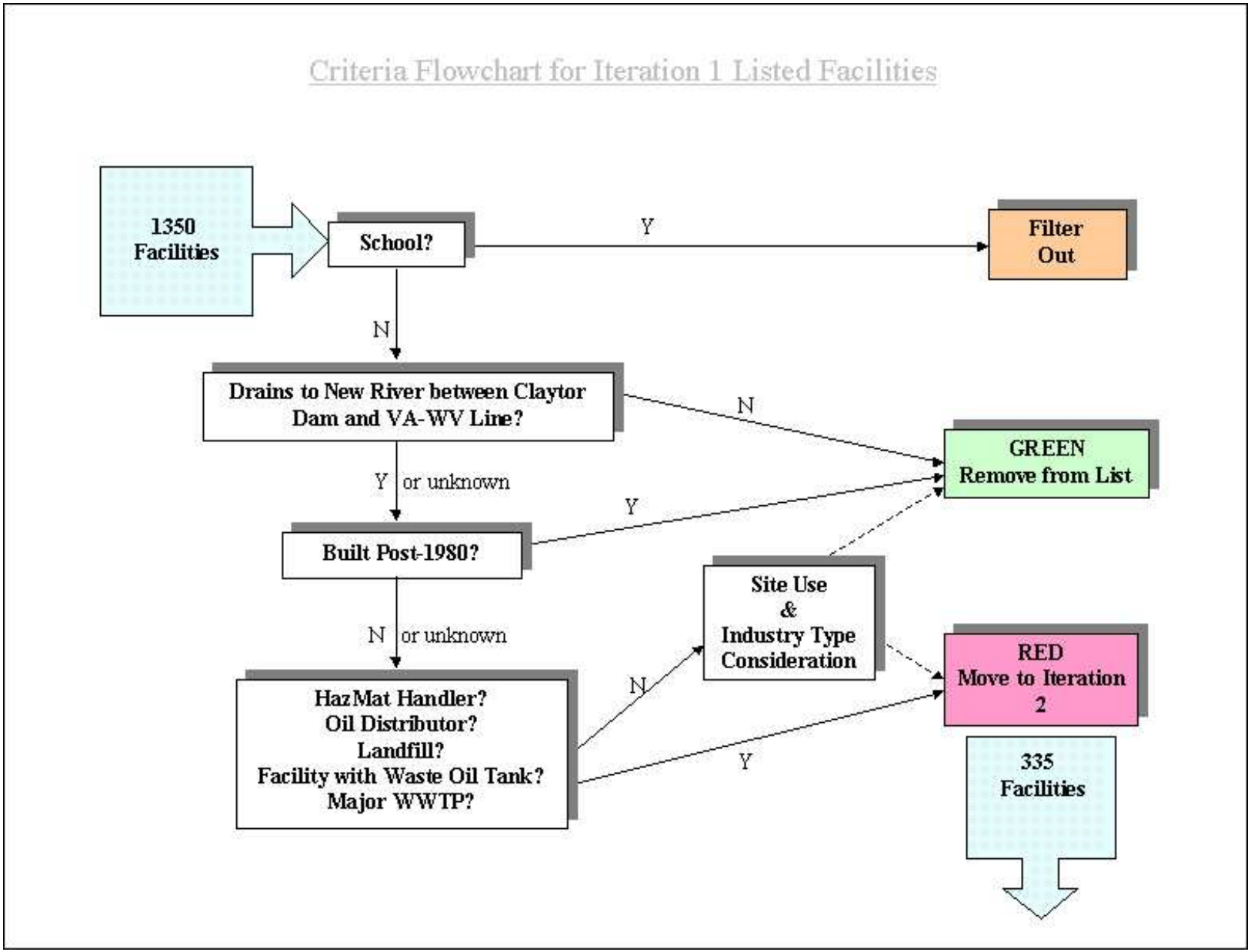
Information Sources

DEQ Records: Comprehensive Environmental Data System (CEDS)
Permit, inspection, and registration documents and pollution incident reports;
Voluntary Remediation Program database;
Brownfields site screening reports;
Virginia Geographic Environmental Mapping System (http://lexington.yesvirginia.org/);
Toxics Release Inventory.

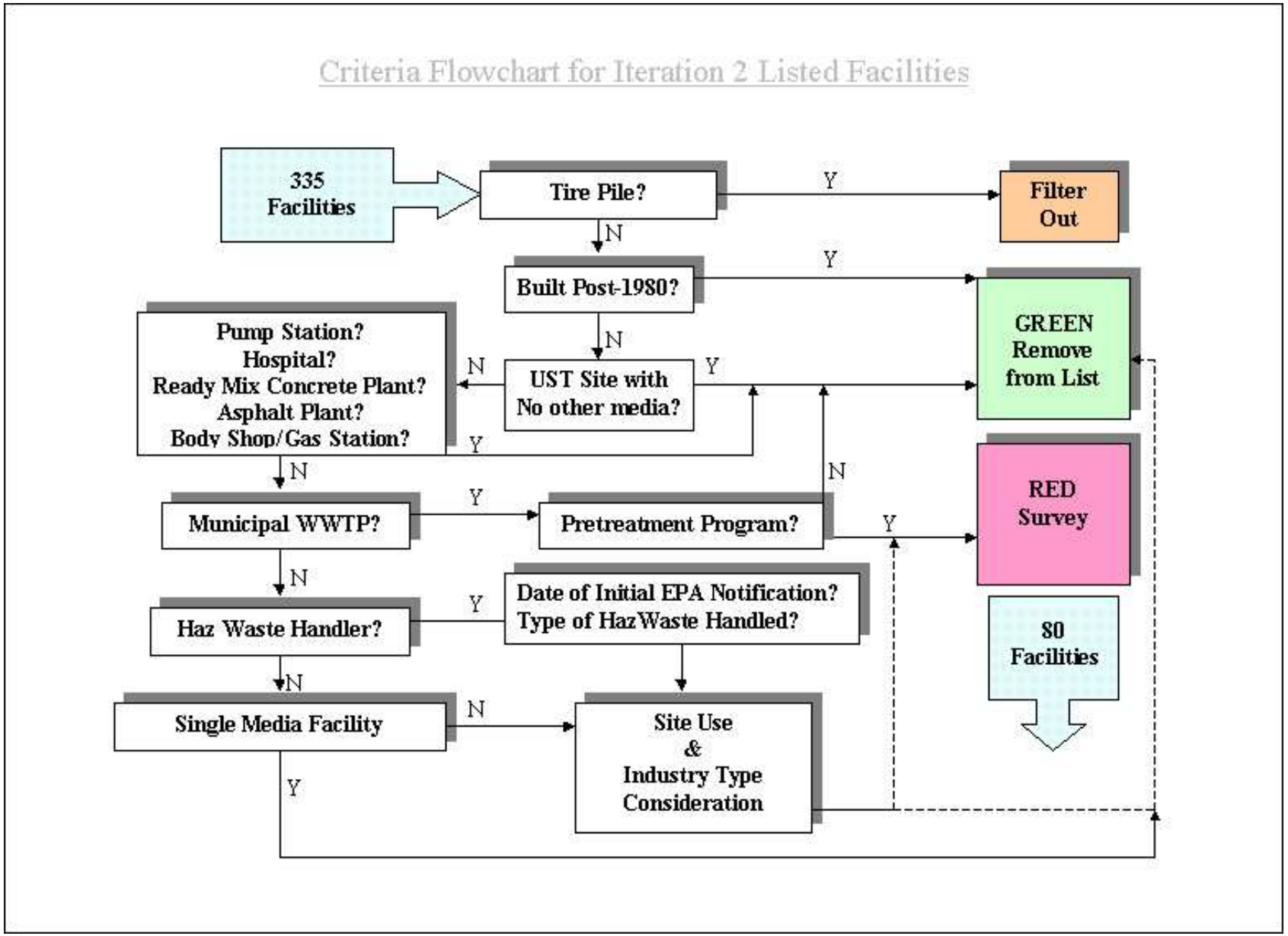
EPA Records: PCB Transformer Registration Database (http://www.epa.gov/opptintr/pcb/data.html);
PCB Activity Database System (http://www.epa.gov/opptintr/pcb/data.html);
The Monsanto List;
Enviromapper (http://maps.epa.gov/enviro/html/mod/enviromapper/index.html);
Envirofacts Warehouse (http://www.epa.gov/enviro/index.html) including:
Permit Compliance System Database,
RCRAInfo,
CERCLA,
TRI.

Other: Citizens' Advisory Committee Meeting minutes;
Historical Documents;
Information provided by area residents and long-time government employees.

Flowchart 1.


Criteria Flowchart for Iteration 1 Listed Facilities
1350 Facilities
School?
Y
Filter Out
N
Drains to New River between Claytor Dam and VA-WV Line?
N
GREEN Remove from List
Y or unknown
Y
Built Post-1980?
Site Use & Industry Type Consideration
N or unknown
RED Move to Iteration 2
HazMat Handler?
Oil Distributor?
Landfill?
Facility with Waste Oil Tank?
Major WWTP?
N
Y
335 Facilities

Flowchart 2.


Criteria Flowchart for Iteration 2 Listed Facilities
335 Facilities
Tire Pile?
Y
Filter Out
N
Built Post-1980?
Y
GREEN Remove from List
N
Pump Station?
Hospital?
Ready Mix Concrete Plant?
Asphalt Plant?
Body Shop/Gas Station?
N
UST Site with No other media?
Y
Y
N
Municipal WWTP?
Y
Pretreatment Program?
N
Y
RED Survey
N
Haz Waste Handler?
Y
Date of Initial EPA Notification?
Type of HazWaste Handled?
80 Facilities
N
Single Media Facility
N
Site Use & Industry Type Consideration
Y

MEMORANDUM
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
West Central Regional Office

3019 Peters Creek Road Roanoke, VA 24019

SUBJECT: New River PCB Source Investigation Survey
FROM:
DATE: June 7, 2004

Your Name, Title, and Phone # : _____
Facility Name: _____
Facility Location: _____
Permit Nos (if applicable): _____

To the best of your knowledge, please provide answers to the following questions:

1. When did operations begin at this facility? _____

2. Please list any known former uses/occupants of this site. _____
   _____
   _____
   _____

3. Were PCBs, or materials containing PCBs, ever used on-site in any of the following equipment or activities?

YES	NO		COMMENTS
___	___	transformers	
___	___	capacitors	
___	___	generators	
___	___	heat extractors/exchangers	
___	___	pesticides	
___	___	road treatment for dust control	
___	___	oil fired boilers	
___	___	oil heated presses	
___	___	other (plasticizers, emulsion oils, etc.)	

   a. If power generators were used on-site to generate power for the facility, what was the duration of use and the power source? _____
      _____

   b. If oil fired boilers were used on-site, was waste oil ever burned? _____

4. If PCBs were used on-site:

   a. During what time periods were they used?_____
   b. How and where were they stored? _____
   c. Were any releases or leaks detected? _____
   d. Do analytical data exist for any release event(s)? _____
   e. How and where were PCBs or PCB contaminated materials disposed of? _____

5. Is the facility wastewater discharge permitted by DEQ___, or by municipal pretreatment program___?

   a. Have PCBs ever been detected in wastewater? _____
   c. Have PCBs ever been detected in sludge? _____

   If yes, what was the period, duration, PCB concentration, and follow-up action taken? _____
   _____
   _____

6. Were PCBs ever detected in storm water discharges? _____
   If yes, what was the period, duration, PCB concentration, and follow-up action taken?_____
   _____
   _____
   _____
   _____

7. Has this facility ever operated a landfill? _____

   If yes: a. What was the period of operation? _____
   b. Was it a permitted facility? _____
   c. What is the location of the landfill? _____
   d. What materials were disposed of? _____
   f. Are PCB data available for the landfill, including groundwater, storm water, or soil?
   _____
   _____
   _____

Selected Names for PCB-Containing Substances

Table 1. Trade and common names for PCB-containing materials (not all-inclusive)

ALC	ASK	Aceclor	Adkarel,
Apirorlio	Aroclor	Asbestol	Ascarele
Askarel *	Bakola 131	Capacitor 21	Caswell no 672A
Chlophen	Chlorextol	Clophen	Cloresil
Chlorinol	Clorinal	Clorphen	DK
Delor	Diaclor	Diconal	Ducanol
Dykanol	EEC-18	Educrel	Elemex
Elinol	Eucarel	Fenclor	Fenchlor
Gechloreerdedifenyl	Hydol	Hyrol	Hyvol
Inclor	Inerteen	Kanegafuchi	Kaneclor
Kanechlor	Kennechlor	MCS 1489	Magvar
Montar	Monter	Nepolin	No-Flamol
Non-Flammable Liquid	Phenochlor	Phenoclor	Plastivar
Pydraul	Pyralene	Pyranol (GE)	Pyroclor
Saf-T-Kuhl	Santotherm	Santotherm FR	Santovac 1 and 2
Solvol	Sovtol	Sovol	Therminol **

* Generic for a PCB and solvent mixture.
** Therminol products now formulated in the U.S. do not contain PCBs.

Attachment B:

- Figures